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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,772	09/17/2003	Volker Braun	Q77079	2953
23373 7590 06/04/2007 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER WIN, AUNG T	
			ART UNIT 2617	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/663,772	Applicant(s) BRAUN ET AL.	
	Examiner Aung T. Win	Art Unit 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date: _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-10 filed on 03/12/2007 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 6 comprises limitation "software instructions" which has never been specified in the original disclosure in combination with other limitations in the claims.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 6 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding Claim 6, cited claim limitations "adapted to" renders the claim indefinite because "adapted to" is typical of claim limitation, which

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may not distinguish over the prior art. It has been held that the recitation that an element is "adapted to" performing a function is not a positive limitation but only requires the ability to so perform.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 6 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The language of the claim raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

Claim 6 claims "computer program product" which appears to examiner that the non-statutory subject matter "program" is being claimed. Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1754 (claim to a data structure per se held nonstatutory). Therefore, since the claimed programs are not tangibly embodied in a physical medium, encoded on a computer-readable medium and clearly recited as a "computer program" then the Applicants has not complied with 35 U.S.C 101.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 6-8, 10 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admitted prior art: "Evolving WCDMA" by Hedberg et al (hereinafter Hedberg) in view of IEEE published prior art: "Transmit Diversity applied on the CDMA/TDD cellular system" by Hiramatsu et al. (hereinafter Hiramatsu).

4.1 Regarding Claims 1 & 2, Hedberg discloses a HSDPA system and method of sending first and second signals to a plurality of user equipments, the method comprising the steps of:

Providing a dedicated channel for each one of the plurality of user equipments [DPCH is used to carry control information signal or circuit switch service information signal: See General channel structure on Page 129];

Sending first signal (i.e., control information signal or circuit switch service information signal) to one of the plurality of user equipments on one of the dedicated channels (i.e., DPCHs) on a carrier frequency;

Providing a code-multiplexed shared channel for the plurality of user equipments [High Speed Downlink Shared Channel (HS\_DSCH) shared among users by assigning

codes to each user: See HSDPA-Improved support for best-effort services on Page 128-129];

Sending one of the second signals to one of the plurality of user equipments on the code-multiplexed shared channel on the carrier frequency by applying multi-user diversity [sending high speed packet data to the users on code-multiplexed HS\_DSCH shared channel on the carrier frequency by applying multi-user diversity: See HSDPA-Improved support for best-effort services on Page 128-129];

Assigning an antenna of a set of antennas to each one of the plurality of user equipments [Figure 4, Architecture of the radio base station with multiple antennas used for dedicated users and shared users].

Hedberg also teaches applying transmit diversity in downlink for improving coverage and capacity [Advanced antenna solutions: Page 127] [Open-loop transmit diversity: Page 126]. Therefore it is obvious to one of ordinary skill in the art that base station antennas in the disclosed system would be configured for both transmit diversity and multi-user diversity transmission method. Hedberg does not explicitly teach applying transmit diversity in sending first signal to user equipment on the dedicated channel as claimed. It should be noted that open-loop or closed-loop transmit diversity and multi-user diversity are well known techniques applied in the wireless system at the time of invention of made. Hiramatsu teaches open-loop transmit diversity applied to DPCH [Dedicated Physical Channel DPCH and Figure 6 on Page 1171].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention of made to apply transmit diversity on DPCH as taught by Hiramatsu to

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modify Hedberg's system as claimed i.e., applying multi-user diversity and transmit diversity by assigning the antennas accordingly. One of ordinary skill in the art would have been motivated to do this to enhance the capacity, coverage and reliability of the wireless system.

4.2 Claim 6 is rejected for the same reason as stated above in Claim 1 rejection because claimed executable steps substantially read on the corresponding steps of Claim 1. It is obvious to one skill in the art that modified system must have claimed computer program instructions for executing the claimed steps because the system applying modified method is computer based system.

4.3 Claims 7 & 8 are rejected for the same reason as stated above in Claim 1 rejection because claimed steps substantially reads on the corresponding steps of Claim 1. Modified system discloses base station (claimed sender) for sending of first and second signals to a plurality of user equipments. It is obvious to one of ordinary skill in the art that modified base station must have claimed components and scheduler in order to execute corresponding claimed steps because the base station as modified is configured to transmit downlink signals to serving users on corresponding assigned channels applying transmit diversity and multi-users diversity as stated above in Claim 1.

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4.4 Claim 10 is also rejected for the same reason as stated above in Claim 1 rejection because claimed steps executed by system substantially reads on the corresponding method steps of Claim 1. It is obvious that wireless system operating with modified method for sending of first and second signals to a plurality of user equipments, wherein the system would comprises multiple base stations (claimed components) configured to transmit downlink signals to serving users on corresponding assigned channels applying transmit diversity and multi-users diversity as stated above in Claim 1.

4.5 Claim 11 is also rejected for the same reason as stated above in Claim 1 rejection. It is obvious that the method as modified would simultaneously communicate with users on assigned channels as claimed in Claim 11. Claimed concept of simultaneously communicating with users is well known to one skill in the art at the time of invention of made.

5. Claims 3, 4, 5 & 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant admitted prior art: "Evolving WCDMA" by Hedberg et al (hereinafter Hedberg) in view of IEEE published prior art: "Transmit Diversity applied on the CDMA/TDD cellular system" by Hiramatsu et al. (hereinafter Hiramatsu), further in view of Dahlman et al. (US20020145988A1).



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5.1 Regarding Claims 3 & 9, modified system as stated above teaches as claimed in claim 1 and does not explicitly disclose assigning carrier frequency to the dedicated and shared channels. It is obvious to one of ordinary skill in the art that dedicated and shared channels must be assigned with carrier frequency because they are communication channels.

Dahlman also teaches assigning carrier frequency from a set of available carrier frequencies [0037]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention of made to assign the carrier frequency to dedicated and shared channels from a set of carrier frequencies as taught by Dahlman frequency assigned method to modify as claimed. One of ordinary skill in the art at the time of invention of made to do this to optimize the communication network.

5.2 Claim 4 is rejected for the same reason as stated above in Claim 3 rejection. Hedberg also teaches transmitting high speed data using dedicated channels [dedicated channel is suitable for users close to cell borders: page 127] and also teaches using transmit diversity for slow moving user equipment [open-loop transmit diversity: Page 126]. Therefore, it would have been obvious that modified method is also configured to apply transmit diversity to send second signal to users as claimed.

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5.3 Regarding Claim 5, modified method also teach closed loop transmit diversity i.e., best antenna is selected for transmission based on channel condition information received by each antenna in uplink slot [Hiramatsu: See Selective Transmit Diversity on Page 1171]. At the time of invention of made, the concept and advantage of applying closed loop diversity in the wireless system is also well known to one of ordinary skill in the art.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aung T. Win whose telephone number is (571) 272-7549. The examiner can normally be reached on 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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May 17, 2007

  
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